

Claims

What is claimed is:

- 1        1.    An anchor for securing soft tissue to bone or to  
2    soft tissue comprising:  
3        an attachment means having a long axis and a head at a  
4    first end of the long axis;  
5        means to accommodate a securing or drive tool ; and  
6        an anchor hole through the head, the anchor hole having  
7    an upper aperture and a lower aperture, the anchor hole  
8    oriented to cause a line through the center of the anchor  
9    hole to intersect an extension of the long axis beyond the  
10   head.
- 1        2.    The anchor of claim 1 further comprising:  
2        a shoulder displaced about the attachment means near  
3    the head to provide a visual and tactile reference for  
4    maintaining proper head height above the bone.
- 1        3.    The anchor of claim 1 wherein the upper aperture  
2    and lower aperture are chamfered.
- 1        4.    The anchor of claim 3 wherein the chamfer extends  
2    from 5 to 50 percent of the total length of an anchor hole.
- 1        5.    The anchor of claim 1 further comprising:  
2        a plurality of anchor holes disposed about the  
3    circumference of the head.
- 1        6.    The anchor of claim 1 wherein the anchor comprises  
2    an inert material.
- 1        7.    The anchor of claim 1 wherein the anchor comprises  
2    plastic, stainless steel, titanium alloy or absorbable  
3    material or a combination thereof.
- 1        8.    The anchor of claim 1 wherein the attachment means  
2    comprises a screw.

1        9.    The anchor of claim 8 wherein the means to  
2    accommodate a securing or drive tool comprises a drive  
3    aperture on the head to accept a tool for imparting torque  
4    to the anchor.

1        10.   The anchor of claim 1 wherein the head is  
2    generally conical having a vertex, an upper surface and a  
3    lower surface, the vertex of the cone attached to the  
4    attachment means with the primary axis of the cone collinear  
5    with the long axis of the attachment means.

1        11.   The anchor of claim 10 wherein the angle between  
2    the lower surface and the long axis is between 90 and 150  
3    degrees.

1        12.   The anchor of claim 10 wherein the angle between  
2    the anchor holes and the long axis is between 0 and 75  
3    degrees.

1        13.   The anchor of claim 10 wherein the angle between  
2    the anchor holes and the long axis is between 35 and 50  
3    degrees, and the chamfers are 45 degrees from a centerline  
4    through each anchor hole.

1        14.   A surgical anchor for reapproximating soft tissue  
2    to bone or to soft tissue comprising:  
3        a screw having a head, a shank and a threaded end;  
4        a shoulder between the body and the shank to provide a  
5    visual and tactile reference for proper head height above  
6    the bone;  
7        means to accommodate a securing or drive tool; and  
8        a plurality of generally radial anchor holes disposed  
9    about the circumference of the head and extending through  
10   the head, each anchor hole describing an angle between 0 and  
11   75 degrees from the shank to a line through the anchor hole.

1        15.   The anchor of claim 14 wherein the anchor  
2    comprises an inert material.

1        16. The anchor of claim 14 wherein the anchor  
2 comprises plastic, stainless steel, titanium alloy or  
3 absorbable material or a combination thereof.

1        17. The anchor of claim 14 wherein the anchor holes  
2 are skewed about the long axis of the body.

1        18. The anchor of claim 14 wherein the plurality of  
2 anchor holes further comprise apertures that are chamfered  
3 with a chamfer extending from 5 to 50 percent of the total  
4 length of an anchor hole.

1        19. The anchor of claim 14 wherein the head is an  
2 inverted cone having a generally flat upper surface and a  
3 sloping lower surface describing an angle between 90 and 150  
4 degrees from the surface of the shank.

1        20. The anchor of claim 14 wherein the means to  
2 accommodate a securing or drive tool comprises a drive  
3 aperture on the head to accept a tool for imparting torque  
4 to the anchor.

1        21. An anchor for securing soft tissue to bone or to  
2 soft tissue comprising:  
3        an attachment means having a long axis and a head at a  
4 first end of the long axis;  
5        means to accommodate a securing or drive tool; and  
6        an anchor hole through the head, the anchor hole having  
7 an upper aperture and a lower aperture, the anchor hole  
8 oriented to cause a line through the center of the anchor  
9 hole to be skew to the long axis.

1        22. The anchor of claim 21 further comprising:  
2        a shoulder displaced about the attachment means near  
3 the head to provide a visual and tactile reference for  
4 maintaining proper head height above the bone.

1        23. The anchor of claim 21 wherein the upper aperture

2 and lower aperture are chamfered.

1 24. The anchor of claim 23 wherein the chamfer extends  
2 from 5 to 50 percent of the total length of an anchor hole.

1 25. The anchor of claim 21 further comprising:  
2 a plurality of anchor holes disposed about the  
3 circumference of the head.

1 26. The anchor of claim 21 wherein the anchor holes  
2 are in a plane perpendicular to the long axis.

1 27. The anchor of claim 21 wherein the attachment  
2 means comprises a screw.

1 28. The anchor of claim 27 wherein the means to  
2 accommodate a securing or drive tool comprises a drive  
3 aperture on the head to accept a tool for imparting torque  
4 to the anchor.

1 29. The anchor of claim 21 wherein the anchor  
2 comprises an inert material.

1 30. The anchor of claim 21 wherein the anchor  
2 comprises plastic, stainless steel, titanium alloy or  
3 absorbable material or a combination thereof.

1 31. The anchor of claim 21 wherein the head is  
2 generally conical having a vertex, an upper surface and a  
3 lower surface, the vertex of the cone attached to the  
4 attachment means with the primary axis of the cone collinear  
5 with the long axis of the attachment means.

1 32. The anchor of claim 31 wherein the angle between  
2 the lower surface and the long axis is between 90 and 150  
3 degrees.

1 33. The anchor of claim 31 wherein the angle between  
2 the anchor holes and the long axis is between 0 and 75

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3 degrees.

1        34. The anchor of claim 31 wherein the angle between  
2 the anchor holes and the long axis is between 35 and 50  
3 degrees, and the chamfers are 45 degrees from a centerline  
4 through each anchor hole.